SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS	Guidance Note: 08 Annex: 8D Version: 1.0 Date: 18/12/25

SUMMARY

For a Building Control Approval Staged Application, it is necessary at each particular application stage to provide detailed information for the current stage and a summary of the design principles and building standards to be adopted for the following stage(s). This is to demonstrate a clear understanding of the design, with a planned route to compliance with the Building Regulations.

This Annex provides an example of how this could be presented within the overall Building Regulations Compliance Statement document.

This document has been drafted for guidance only and using an example project comprising of a single Higher-Risk Building with a basement. It is intended to show the typical level of content/detail to be provided.

This is not a template as the technical content should be project-specific.

NOTE: This guidance note should be read in conjunction with:

- **CLC Guidance Note 08 – Staged Applications**

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

EXAMPLE: DESIGN PRINCIPLES AND STANDARDS CONTENTS

1.0 INTRODUCTION

This section provides a summary of the **design principles and building design standards** (as required in the Building (Higher-Risk Buildings Procedures) (England) Regulations 2023, Regulation(3)(b)(ii)(bb)) that are being applied to the subsequent stage work (Stage 2 - the superstructure) when making a staged application for the current stage works (Stage 1 – the substructure).

Its purpose is to demonstrate that the design strategy is understood, and the design is sufficiently developed, adopting solutions that will provide a route to compliance with the building regulations. It provides clarity that the subsequent Stage 2 design has been suitably understood to inform the completed design for Stage 1.

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

2.0 SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
A – STRUCTURE	
The primary structural frame is designed to Eurocodes and the UK National Annexes together with relevant supporting technical guidance as appropriate. The primary structural frame is an in-situ reinforced concrete (RC) frame with RC flat slab floors for the tower floor plates from Level 01 to roof supported RC columns and the central RC core. Columns are continuous down to foundation creating direct load paths down to foundations. The roofs and the roof top terraces are flat roofs constructed in reinforced concrete (RC) the same as the main floor slabs. There are no pitched roofs to the building. The slabs support the unitised cladding around the building perimeter at each floor level. An edge thickening is provided at the balcony locations to accommodate the balcony steel stub bracket and the fire stop/cavity barrier. **Stability** Lateral stability is provided by an in-situ reinforced concrete core - concrete shear walls formed around the lift shafts, risers and stair wells that combine to form the structural stability core. The core is continuous from roof down to foundation. The frame is designed to provide the required horizontal and vertical ties to connect the framing members together to achieve a robust frame that will meet the requirements of AD-A3.	All elements of the structure are designed in accordance with BS EN 1990:2002. All loading is in accordance with: • BS EN 1991-1-1: 2002: General actions. Densities, self-weight, imposed loads for buildings. • BS EN 1991-1-2:2002: General actions. Densities, self-weight, imposed loads for buildings. • BS EN 1991-1-3:2003: General actions. Snow loads. • BS EN 1991-1-4:2005: General actions. Wind actions. • BS EN 1991-1-5:2003: General actions. Thermal actions.

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
The RC frame is designed to achieve the required fire resistance and durability to meet the functional requirements of Building Regulations and the Fire Consultant's 'Stage 1 Fire Strategy' document reference number XXXX and revision XX dated DD.MM.YYYY: • Fire – the structural elements are sized to meet the minimum thickness requirements and the minimum cover to rebar to meet the 120 min fire resistance period of the structure. • Durability – In accordance with BS 8500, the appropriate exposure class for each RC element is defined. Appropriate concrete mix designs and cover to rebar are adopted to achieve the required durability for the RC frame. The façade is a unitised aluminium rainscreen with double glazed windows. Steel balconies are integral to the unitised façade. The façade self-weight has been determined in conjunction with the façade consultant. **Design loads** The structural design loads are known. Materials and build ups for all finishes are known to determine superimposed dead loads. The use category for each storey is known to determine imposed loads. The structural elements (slabs, columns and cores have been designed to determine the correct self-weight of the structure. Wind loads are determined from code values. This enables the load takedowns to be calculated down to foundation level.	• BS EN 1991-1-6:2005: General actions. Actions during execution. • BS EN 1991-1-7:2006: General actions. Accidental actions. • PD 6688-1-2 Background paper to the UK national Annex to BS EN 1991-1-2. • PD 6688-1-4 Background information to the National Annex to BS EN 1991-1-4 and additional guidance. • PD 6688-1-7 recommendations for the design of structures to BS EN 1991-1-7.

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
B – FIRE	
Please refer to the Fire Consultant's 'Stage 1 Fire Strategy' document reference number XXXX and revision XX dated DD.MM.YYYY. **Means Warning and Escape** The residential apartments will adopt a stay put evacuation strategy whereby only the apartment of fire origin will evacuate in the event of a fire. An evacuation alert system will be provided to enable the Fire Brigade to undertake the partial or full building evacuation if considered necessary. The following fire detection and alarm systems will be provided throughout the building: • Apartments: LD1; • Common corridors: L5; • Ancillary areas: L3. The residential corridors will be ventilated via mechanical smoke shafts. Make up air will be provided via 1.0m2 automatic openable vents (AOVs) provided at the head of each stair. Escape from the upper levels will be available via two protected stairways; one of the stairs will be constructed as a firefighting stair. Both stairs will discharge directly to outside at the lower	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
ground and ground levels. Evacuation of mobility impaired occupants will be facilitated by the provision of an evacuation lift and an Emergency Voice Communication system (EVCs). **Internal Fire Spread (Linings)** The internal linings of the building will comply with the recommended fire performance described in guidance document. All linings will be tested to the methods outlined in BS EN 13501-1:2018. **Internal Fire Spread (Structure)** The structural elements for the building will achieve a minimum of 120 minutes fire resistance (R). All floors will be constructed as compartment floors, achieving 120 minutes fire resistance (REI). Residential sprinklers conforming to BS 9251:2021 will be provided to all residential apartments and ancillary areas. **External Fire Spread** All of the materials which become part of an external wall (other than those exempted by the regulation) will achieve European Classification A2-s1,d0 or Class A1, classified in accordance with BS EN 13501-1: 2018. Membranes and EPDM's used as part of the external wall system will achieve Class B-s3,d0. The external wall and facade meet the requirements of the Fire Engineer's 'Fire Strategy' document maintaining compartment floor and wall requirements at interfaces.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
No additional fire protection will be required to the external façades based on the building's boundary distances. Roofs: The roofs meet the requirements of the Fire Engineer's 'Fire Strategy' document ref XXXX. **Access and Facilities for the Fire Service** Building B3 will be provided with one firefighting shaft serving all floors. The firefighting shaft will contain a firefighting stair, a dry fire main and a firefighting lift. Vehicle access for Fire and Rescue Service will be provided to within 18m and in sight of the dry fire main inlet point, located at lower ground level. Vehicle access to commercial units will be provided to 15% of their perimeter. To provide the recommended hydrant coverage for the entire site, additional hydrants will be provided within 90m from the rising main inlets. The active fire protection systems will be provided with a secondary power supply. The secondary power supplies shall be in accordance with BS 8519.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
C – RESISTANCE TO CONTAMINATION AND MOISTURE	
Ground moisture and tanking of the basement is described in the Stage 1 section of the compliance statement. **External walls** Please refer to 'Stage 1 Facade Consultant' document reference number XXXX revision XX dated DD.MM.YYYY. The Curtain wall at ground floor is manufactured from a2-s1, d0 powder coated Aluminium and insulated glass units. All of these products are impervious to moisture. A Unitised Curtain Walling system (UCW) has been specified and will be designed to achieve weathertightness as per BS EN 1027. Aluminium framing and panels are coated with PPC class 2 for external application and class 1 for internal. The UCW incorporates pressure-equalised and drained joints, in line with CWCT standards. The façade systems are thermally broken and incorporate vapour control as metal sheet at the back of opaque panel sealed by non-hardening mastic (silicone) against the framing profiles. The curtain wall façade system is designed in accordance with BS EN ISO 13788 and BS 5250 to avoid any risk of interstitial and surface condensation within its scope of work. At the interface at ground level, a continuous fire classified EPDM alternative membrane is fixed to the underside of the bottom transom of the façade and bonded on to the hot melt	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
waterproofing on the concrete upstand on the ground floor. This closes the gap between the façade and the structure ensuring the continuity of the waterproofing on the ground floor. To carry moisture away from the façade the external FFL slopes away from the building to allow water to drain away into the external ground build up. **Roofs** The roof is an inverted roof system on a concrete slab with screed to falls to achieve min. 1:80 fall in accordance with BS 6229-2018. The roof build-up will consist of a two-part spray-applied polyurethane membrane, XPS rigid insulation, a water flow reduction layer, min. 50mm deep layer of gravel and a variety of roof finishes. These include pavers on pedestals on terraces and plant enclosures and green roof and gravel to the non-accessible roof areas.	
D – TOXIC SUBSTANCES	
UREA FORMALDEHYDE (UF) FOAM is not used on the project.	N/A
E – RESISTANCE TO SOUND	
Please refer to the Acoustic Consultant's 'Stage 1 Acoustic Strategy' document reference number XXXX revision XX dated DD.MM.YYYY. The key acoustic design principles for the project are: • Protection against sound from sources external to the development; • Protection against sound from other parts of the same building; • Protection against sound from within the same occupancy;	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
• Protecting external receivers from sound generated within the development; and • Control of reverberation. **Control of Noise Ingress** Acoustic specifications for façades (windows, ventilators, etc.) are based on internal noise limits and environmental noise surveys data. Where this may influence the ventilation or cooling strategy this is coordinated with the building services engineers. The criteria for internal ambient noise level of dwellings is: • Day - 35dB for resting areas, 40dB for dining areas; • Night – 30dB LAeq, 8hr, 45dB LAF,max. The façade provides the required sound insulation taking into consideration horizontal and vertical flanking with internal walls and floors. **Internal Sound Insulation** Floor and wall construction build ups have been developed by the architect and meet the required acoustic requirements. Internal stud walls comprise twin layers of 15mm density xx board each side with full-fill mineral wall.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Floor construction comprises of floor finish, 50mm min screed, 25mm insulation, acoustic mat, RC slab, ceiling void and 12.5mm plasterboard ceiling. **Room Acoustics and Reverberation Control** Two methods to mitigate against reverberation are described within Approved Document E to satisfy the requirements of Regulation E3, Method A and Method B: • Method A, cover a specified area with an absorber of an appropriate class that has been rated according to BS EN ISO 11654:1997 Acoustics. Sound absorbers for use in buildings. Rating of sound absorption. • Method B, Determine the minimum amount of absorptive material using a calculation procedure in octave bands Common parts finishes with certified or known laboratory tested sound absorption performance have been specified to meet or exceed the minimum performance requirements. The proposed finishes have been reviewed in line with the methodology set out in Approved Document E to determine compliance with the Method A or B as described above. **Mechanical Services and Plant Noise** The noise and vibration limits applying to Internal and external building services are identified and initial noise and vibration control limits identified. Duct silencers, acoustic enclosures / screens will be adopted to control noise levels.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
F – VENTILATION	
Apartment ventilation MVHRs are provided to each apartment, suitably sized to comply with both Parts F and O requirements. The specification and selection of MVHR models will operate at sufficiently low speeds to limit acoustic breakout. All ductwork and louvres are sized to operate at sufficiently low velocities when in background ventilation mode. Attenuators are be provided on each main ductwork MVHRs will be mounted within the utility cupboard on anti-vibration mounts. A continuous whole house ventilation system for each apartment has been provided. The system extracts air from all wet rooms (bathrooms & ensuites), utility cupboards and kitchens and supplies fresh air to all habitable rooms (bedrooms & living rooms). Purge ventilation is generally via openable windows to remove high concentrations of pollutants and water vapour. Where openable windows cannot meet the purge ventilation requirements, a dedicated mechanical purge fan is provided. Where the purge ventilation requirements cannot be satisfied via natural openings, a dedicated mechanical extract system is provided. Individual fans are provided to the rooms that require mechanical extract sized to 4ACH in line with section 1.30 of AD F Vol 1. MVHRs duties are sized to meet the minimum high-rate extract ventilation rates for continuous systems outlined in Table 1.2 of Approved Document F. Extract ventilation is provided to all kitchens, utility cupboards, bathrooms and WCs via ducted ceiling grilles. Extract ventilation rates have been designed to meet the larger of the minimum	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
high-rate extract ventilation rates for continuous systems outlined in Table 1.2, the minimum whole dwelling ventilation rate (Table 1.3) or 0.3l/s/m² of internal floor area as defined in Approved Document F Volume 1. A recirculating kitchen cooker hood has been specified to meet the minimum extract ventilation rates for intermittent extract systems outlined in Table 1.1 of Approved Document F Volume 1, 60l/s. Ventilation exhausts are positioned so that a minimum of 1 metre separation is achieved between intake and exhaust. There are no exhausts located near or in courtyard, enclosures or architectural screens. Air flow rates of intermittent extract fans, cooker hoods, continuous extract fans and terminals and continuous supply fans and terminals shall be tested. They shall be tested in line with the requirements set out in Section 4.10 of Approved Document F Volume 1 and in line with the manufacturer's installation & testing requirements. **Corridors** Smoke ventilation is provided to each firefighting core in line with the fire strategy which has been verified by Computational Fluid Dynamics (CFD) analysis. The system will comprise of: • Duty and standby smoke extract and supply fans located at roof. • 0.8m² smoke extract builders work smoke extract shafts. • Motorised fire and smoke dampers and louvres mounted on the smoke extract shafts of	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
each floor. • 0.6 m² make-up air duct at ground floor level for both stairs. • 1.0m² automatic opening vents (AOV's) at the top of each staircase to provide make-up air for the smoke extract system. In the event of a fire on a particular floor/apartment the smoke extract fans shall activate and the AOV on that floor will open. Make up air will be provided through dedicated shafts within the protected evacuation lobbies and an opening at low level of the building within the stair area. Air is drawn from the protected evacuation lobbies through the apartment corridor, via two partially open doors. Each apartment corridor has a dedicated builder's work shaft (0.8m²) provided with extract fans on the roof to draw smoke through the shaft to atmosphere. AOV's will be installed on the smoke shaft wall, connecting the apartment corridor at each floor. All smoke shafts are mechanically ventilated up to the roof. Both the common corridors smoke ventilation shafts and the AOV shall be used during normal mode for environmental control to mitigate corridor overheating.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
G – WATER	
A metered potable incoming water supply will be provided for the development. This incoming ring main will serve the domestic cold water storage tank and the residential sprinkler tank. The incoming supply has been sized to satisfy the infill rate of the tank. All cold-water supplies will be designed and installed to BS 806 Parts 1 – 3: 2005 A metered Category 5 supply is provided for the development to serve landlord areas. The Category 5 supply will be served from the potable boosted water supply system to serve individual boosted break tanks units. These units will be located in areas/rooms that will require wash down facilities. These will be positioned in the basement level and roof top areas serving bib taps, waste collection rooms and for plantrooms. Each apartment could use up to 125 Litres of water per person per day. This is calculated by using the water efficiency tool as set out in Approved Document Part G. To achieve the required consumption rate, low flow limiting devices on showers, wash hand basins and kitchen sinks are required on the specified taps.	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
H – DRAINAGE AND WASTE DISPOSAL	
Please refer to the Civil Engineer Consultant 'Stage 1 Drainage' documents reference number XXXX revision XX dated DD.MM.YYYY. For below ground external sub-surface drainage, refer to Stage 1 application compliance statement. **Foul** All foul water discharge appliances are fitted with water seal traps to prevent back flow of foul air from the system. All traps are at a depth of seal as set out in Table 1 of Approved Document Part H. The water trap will be a minimum of 25mm water seal under working and test conditions. All waste branches are in accordance with Approved Document Part H Table 1 which indicates minimum trap sizes and depth of traps, whereby no vent branch pipework is required. All water traps can be cleaned and maintained locally on the event of any blockages, by removing the trap or plug/drain by lifting the cover point. All SVPs (soil vent pipes) and stub stacks are located within dedicated service riser voids. All branch pipework comply with the BS 12056 and Approved Document Part H with branch pipes kept to a minimum of 3m to 4m to avoid any nuisance noisy discharges and pulling of the water traps. All offsets are installed to comply with BS EN 12056-2 ND.3.5.2 (bends at the base of the stack) and vented as set out in Section 1.27 of Approved Document Part H. Sufficient services zones	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
or ceiling voids have been introduced within the different areas to accommodate offsetting pipework. Vent pipework terminate and vent to atmosphere at roof level and are a minimum of 900mm from any opening as per Diagram 6 of Approved Document H. All vent pipework from basement plant such as sump pumps and oil interceptors have been routed independently to atmosphere at roof level. **Rainwater** Rainwater outlets are connected to a series of rainwater downpipes pipes within central core riser and downpipes dropping in agreed boxed out locations. These connect to a below ground site wide drainage network system through outfall locations in the basement level. Rainfall intensity used for hydraulic design calculations is 2013 FEH rainfall model in line with LLFA policy.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
J – COMBUSTIBLE APPLIANCES AND FUEL STORAGE	
The development has no combustible heat generation plant.	[List as necessary]
K – PROTECTION FROM FALLS, COLLISIONS AND IMPACT	
Stairs All communal stairs have a going of 250mm, and a riser less than 170mm (exact dimension depending upon floor-to-floor dimension). All stairs to the common areas provide a 1200mm clear width between stair enclosure wall and balustrade to the open well. The wall side handrail encroaches on this width by less than 100mm. Roof access is required less than once per month for inspection and BMU access by trained operatives and is not accessible to residents. Handrails are provided on both sides of all stairs (flight and landings), set 900mm above the stair pitch line, and 1000mm at landing level. Wall mounted handrails extend 300mm beyond the top / bottom riser of a stair flight at main floor landings.	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Access to the roof is via a companionway ladder in accordance with BS 4211: 2005 + A1:2008. This has replaced BS 5395-3 referenced in the Approved Document Part K. **Guardings** Guarding to terraces/balconies to individual flats is provided to 1200mm above finished floor level. Guarding is formed from vertical bars (at max 100mm centres) to provide a barrier that is not easy climbable and will prevent small children from being held fast. The base rail is within the depth of the vertical balustrading and so does not offer a climbing purchase, and the top rail is sloped to not provide a usable surface. This guarding is designed for a loading allowance of 0.74KN/m UDL at 1100mm and a UDL 1.0KN/m2 applied to the infill, and a point load of 0.5KN applied to the infill. **Impact with glazing** Fully glazed doors (Sliding, Communal Entrance and Fire Exit) are glazed with Heat Strengthened glass (to BS EN 1863-1:2011) laminated glass (to BS 14449) inner and outer pane double glazed units to ensure a safe method breakage in accordance with BS 12600. Full height fixed glazing panes and fixed panels below opening lights are glazed with toughened glass (to BS EN 12150) laminated glass (to BS 14449) inner pane triple glazed units to ensure a safe method breakage in accordance with BS 12600. Where these are at ground level the outer pane will also be toughened glass (to BS EN 12150) laminated glass (to BS 14449). **Safe opening and closing of windows**	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Window openings are provided with a fixed sill guarding at 1100mm above internal FFL. All windows are provided with restrictor limiting opening of windows to 100mm. The restrictor can be unlocked with a key. The combination of sill height and restrictor provide protection against falling. Ground floor opening windows are located so that they overlook landscaped areas and not onto accessible routes. All windows are inward opening. **Safe access for cleaning windows** Windows are to be cleaned externally from a roof mounted BMU system, although as they open inwards they can also be cleaned internally. Balcony/terrace sliding doors are cleaned from the balcony/terrace.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
L – CONSERVATION OF FUEL AND POWER	
A floor-area-weighted average of the Dwelling Primary Energy Rate (DPER), the Dwelling Emission Rate (DER) and the Dwelling Fabric Energy Efficiency Rate (DFEE) have been calculated, and these do not exceed a floor-area-weighted average of the Target Primary Energy Rate (TPER), the Target Emission Rate (TER) and the Target Fabric Energy Efficiency Rate (TFEE), respectively. When calculating the DPER, the DER and the DFEE a party wall U-value for the type of construction adopted has been applied in line with Part L 2021, Volume 1, Table 2.1. **Lighting** The overall approach to the lighting design aims to ensure efficient energy use, compliance with standards, and enhanced lighting performance while minimizing environmental impact. All fixed lighting's efficacies are Part L 2021 Volume 1 compliant and have been accounted for in the calculations for both the dwelling primary energy rate and dwelling emission rate. All the lighting fixtures proposed are equipped with LED modules. The LED technology is characterised by high energy efficiency (lm/W), reducing electrical consumption compared to traditional light sources. Minimising energy use through design has been factored in from the beginning of the design process. A number of architectural and building fabric measures (passive design) and energy efficient services (active design), as defined in the Part L 2021 Volume 1, have been explored and integrated into the design. 'Fabric first' approach has been prioritised and adopted, to reduce the energy demand. The air tightness standards surpass the Part L requirements, which will contribute to reduced heat and	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
coolth losses through the fabric, and therefore reduced space heating and cooling requirements. All apartments are equipped with MVHR systems to provide adequate ventilation with heat recovery. Also, all apartments incorporate an efficient cooling system to minimise the overheating risk. Space heating and cooling is further reduced by the fabric, air tightness and ventilation measures detailed above. **Limiting heat gains and loss** The heating, cooling, domestic cold and hot water pipework within the building shall be insulated along its whole length. A high-performance façade has been specified with appropriate insulation to meet the U-values in the energy statement. The thermal bridges have been incorporated into the SAP Part L 2021 Volume 1 calculations, and the details for these have been defined within the Energy Strategy Report. Installation guidance on each building element will be followed throughout the construction process with adequate photo records for quality management purposes. All pipework insulation thicknesses are to be designed to achieve permissible heat losses from BS 5422. Insulation thickness should be calculated in accordance with BS EN ISO 12241. Ductwork would be insulated throughout its whole length to meet the heat transfer detailed in Part L2, Table 4.5. **Airtightness** The target for the proposed residential areas is within the current Part L Building Regulations target of 8m3/hr per m2 @ 50Pa.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Curtain walling air tightness will be tested in accordance with BS EN 12153. Building Services efficiency All building services systems, such as ventilation and cooling, their efficiencies shall be no lower than the values set out in Part L 2021 Volume 1, Section 6. The specification of space heating and hot systems are based on the following: • An appropriate heat loss calculation for the dwelling. • A sizing methodology that takes account of the properties of the dwelling, such as in the Chartered Institute of Plumbing and Heating Engineering's Plumbing Engineering Services Design Guide. • CIBSE Guide Code of Practice 1 (CP1) for the UK. The heating and hot water distribution network has been sized according with CIBSE Guide Code of Practice 1 (CP1) for the UK. Each habitable room has a dedicated thermostat to control the temperature which will be connected to a control unit located in the utility cupboard. There are no gas-fired or oil-fired heating systems proposed. Low Temperature Hot Water (LTHW) will be generated by air-source heat pumps (ASHPs) installed on the roof.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Heating within the apartments will be distributed via underfloor heating in the habitable rooms (i.e. bedrooms, living areas, dining/kitchen) and electrical underfloor heating and electric tower rails in the bathrooms. Within each apartment room thermostats will be provided for control of the heating system. Room thermostats for electrical underfloor heating system will have a manual override. Cooling within the apartments will be via 2-pipe fan coil units (FCUs) which provide cooling to the occupied spaces (i.e. living areas, dining/kitchen and bedrooms). **Commissioning and Testing** A detailed commissioning and testing plan will be produced by a qualified commissioning specialist.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
M – ACCESS TO USE OF BUILDINGS	
To be read with the Access Consultant's 'Stage 1 Inclusive Design and Access Statement' document reference number XXXX revision XX dated DD.MM.YYYY. All flats are accessed through a residential entrance lobby, giving access to communal corridors at all levels from both passenger lifts and staircases, with individual flat entrance doors from the corridor. The approach to the dwellings has been designed to meet Requirement M4(3) as all routes serve both Category 2: Accessible and Adaptable Dwellings and Category 3: Wheelchair User Dwellings. Private entrance doors are arranged to provide a 1200x1200mm landing outside the door, with the doorway having an 850mm clear opening width (measured in accordance with AD Part M Volume 1 diagram 2.2), and an accessible threshold (less than 15mm projection from level floor finish). The door opening has a 300mm nib to the leading edge of the door (maintained for 1200mm internally), and the door reveal is less than 200mm deep. **Habitable rooms** Flats are generally all on one level, so the living/dining/kitchen area is on the entrance storey and are step free and connected.	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Kitchens and principal eating area are directly connected and step free and are laid out to provide a minimum 1200mm clear in front of/between all kitchen units, appliances and worktops. All bedrooms provide a clear 750mm wide access route from the door to the window, as well as the principal double bedroom providing a 750mm wide access zone to both sides and the end of a standard size double bed in accordance with AD Part M Volume 1 appendix D).	
O – OVERHEATING	
A dynamic thermal modelling analysis in accordance with the Part O and CIBSE TM59 requirements has been carried out using IES VE Software, version 2023.5.1.0. Before running the assessment, a representative sample of apartments ranging from 1 bed, 2 beds, 3 beds and 4 beds have been identified, following the guidance set out in Part O and TM59 documents. To comply with Part O of the Building Regulations, the overheating analysis has been carried out for two scenarios: • Scenario 1 – Thermal comfort with no cooling. • Scenario 2 – Thermal comfort with cooling. This approach minimises the risk of overheating by first reducing the heat entering the building and incorporating passive and mechanical ventilation (Scenario 1), before resorting to active cooling systems (Scenario 2).	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Noise A noise assessment for the entire site has been undertaken. The assessment results indicate that openable windows and doors are not suitable for use as a mitigation strategy against excessive heat. **Providing information** At handover stage, a Home User Guide will be provided for all new dwellings as described in Approved Document L, Volume 1: Dwellings. The Home User Guide will highlight key strategy to 'Staying cool in hot weather' and provide a non-technical advice on how to keep the dwelling cool in hot weather. This information will be provided in accordance with each of the relevant Parts of the Building Regulations, F, L and O.	

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
P – ELECTRICAL SAFETY - DWELLINGS	
The proposed design is based on requirements of latest BS7671 (including latest addendums) that sets out principles for safe erection, installation, inspection and maintenance of the electrical installations. The locations and setting out of the electrical equipment within the dwelling follow the guidance within Approved Document M and to ensure that the design caters for the needs of those with disabilities. In principle all general socket outlets will be installed at 450mm above the floor to the centre of the socket. Light switches will be installed at min 1200mm AFFL and no more than 1400AFFL. Consumer unit will be installed in the utility cupboard so that the switches are at 1400AFFL. All circuits with the dwelling will be provided with RCD production. AFDD protection will be provided on all socket outlets within the dwelling. In communal areas all socket outlets will be provided with RCD protection.	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
Q – SECURITY	
Residential lobbies at ground floor level provide Communal Entrance doors direct to outside, giving access to all flats via the common areas. Fire Exit doors from the common areas (staircases) provide direct access to outside. Individual flats are provided with Flat Entrance doors from the communal areas within the building. No flats are entered direct from the outside. Doorsets to Communal Entrances and Fire Exits are designed and manufactured to meet the security requirements of PAS 24:2012. All easily accessible windows are designed and manufactured to meet the security requirements of PAS 24:2012. Window openings are limited to 100mm with limiting stays. Doorsets to individual flats are designed and manufactured to meet the security requirements of PAS 24:2012.	[List as necessary]

SUMMARY OF DESIGN PRINCIPLES AND STANDARDS

Key Design Principles	Design Standards Used
R – INFRASTRUCTURE FOR ELECTRONIC COMMUNICATIONS	
A direct fibre connectivity will be provided to each tenant. The project will benefit from the provision of fibre services from two major broadband supplies. These services will be extended from the previous project phases via the common basement into dedicated comms room. From the comms room fibre network will be distributed via riser to each apartment floor into the utility cupboard.	[List as necessary]
S – INFRASTRUCTURE FOR THE CHARGING OF ELECTRIC VEHICLES	
Each car parking space is provided with a standard 7kW EVC (electric vehicle charging point). The EVC points are interfaced with the fire alarm system for emergency isolation.	[List as necessary]
T – TOILET ACCOMMODATION	
Part T deals solely with buildings other than dwellings and is therefore not applicable to this application.	[List as necessary]